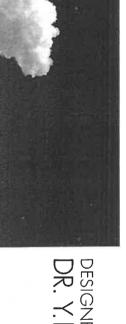
EXCELLENT AIRPLANES



DESIGNED BY
DR. Y. NINOMIYA

Assembly Kit

Dr. Yasuaki Ninomiya was awarded the Grand Prize in both the flight time and distance divisions at the First International Paper Airplane Contest (Pacific Basin Division) in San Francisco in 1967 and served as a judge in the Second Great International Paper Airplane Contest in Seattle in 1985.

Assembly Kit for Models

lacer 520 AMELIA lacer 519 "PAPPY"

lacer 521 JACQUELINE

Racer 522 RICHARD

lacer 523 "BILLY"

friLinear 701 LINDBERG

IriLinear 702 RICKENBACKER

IriLinear 703 CHENNAULT

Light Plane 305 WILBUR

Light Plane 306 ORVILLE McDonnell Douglas PHANTOM II

"STREGA" (Modified P-51 MUSTANG)

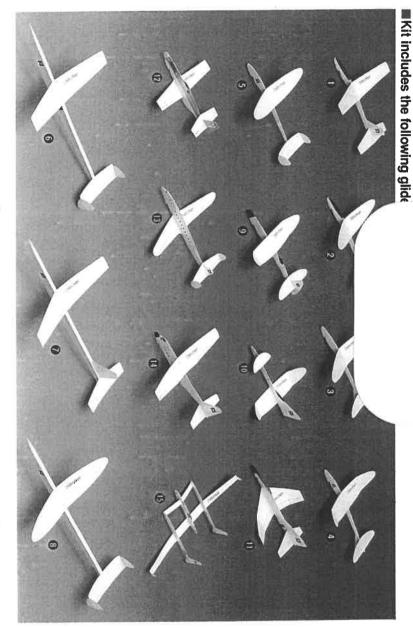
Lockheed C130 HERCULES Lockheed CONSTELLATION

"VOYAGER"

nstruction booklet 60 pages) Assembly, flight, and design directions

Rubber band Catapult Also included:

LUE NOT INCLUDED)



FLYING FUN FOR EVERYONE

When you fly your plane please keep the following in mind.

*Launch your plane in a large area away from people who might get hit.

*Don't fly your plane where cars will be passing by.



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Whitewings

ASSEMBLY INSTRUCTIONS

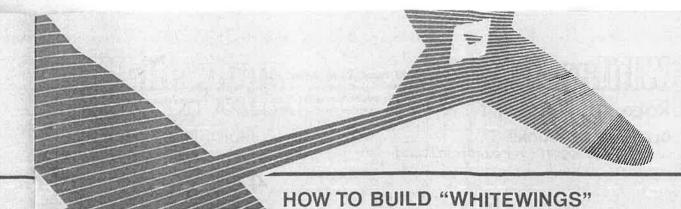
| FLIGHT INSTRUCTIONS

GUIDELINE FOR WHITEWINGS

INTRODUCTION TO PAPER PLANE DESIGN

HOW TO BUILD "WHITEWINGS"





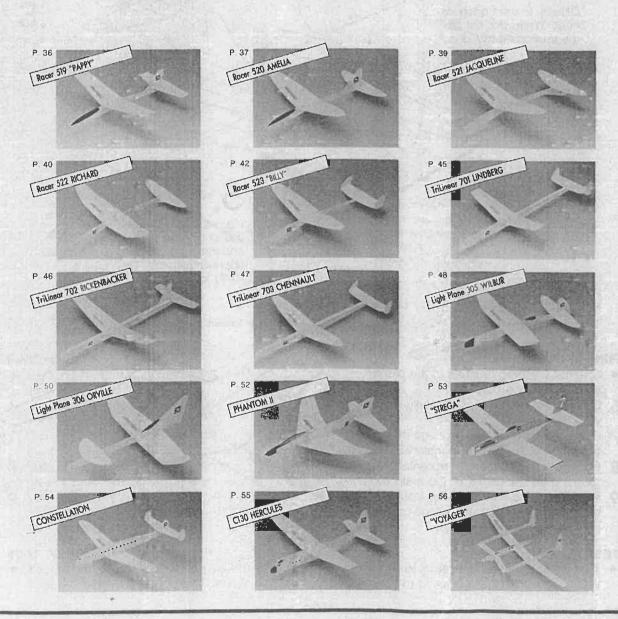
aper with layers of rength.

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that it is umber of ne height ngth and paper are so heavy, sake sure re glued complete, ther than trength.

hitewings is. When difference be much five layer ther and hat you'll aring the yourself

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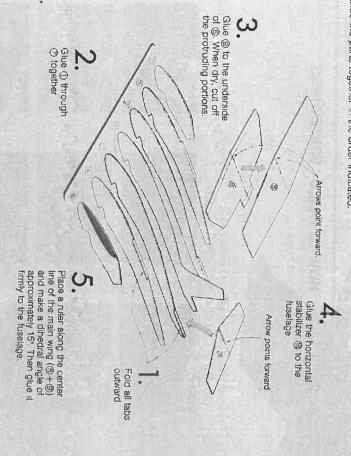


Racer 519 "PAPPY"

Gregory "Pappy" Boyington (1912—1988)
One of the original members of the "Flying Tigers" group in China, Boyington soon qualified as an ace Nuckananot "Pappy" bb his men, he served as the commander of the celebrated fighting unit—the "Blacksheep"

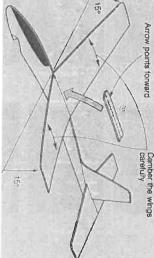
GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



INISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- the dihedral angle for the main wing is 15°. Fold (ii) up slightly along the center line and Using the dihedral angle gauge make sure
- hack and straighten any warps or bends in glue it onto the center of the main wing. View the plane from both the front and the



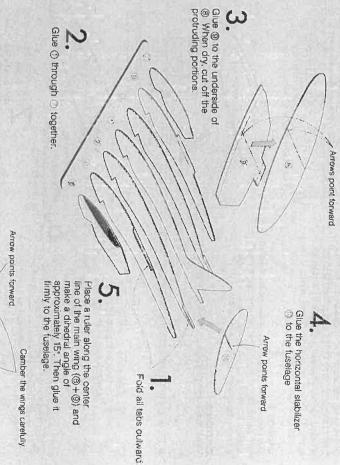
Racer 520 AMELIA

Amelia Earhart (1898–1937)

Beginning her career as a log keeper, Amelia earned instant fame as the first woman to cross the Atlantic as a passenger. She went on to be the first woman priot to make a solo transatientic flight

GLUING INSTRUCTIONS

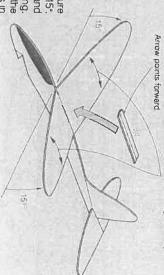
Glue the parts together in the order indicated.



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 6. Camber the main wings carefully with your fingers.
- 8, Fold (1) up slightly along the center line and 7. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 15°
- glue it onto the center of the main wing.

 9. View the plane from both the front and the back and straighten any wards or hends in



HOW TO ASSEMBLE THE MOST WINGS

called camber

Camber

shaped surface in math, I call this type of wing a MOST (Modified Saddle Type) wing. It is part of the wing resembles a so-called saddle featuring a uniform camber along the length of the wing. Because the shape of the central Series have a high performance main wing constructed as follows Three of the racer type planes in this Heritage

Dots towar

Apply glue on half of the underside of @ and glue onto (9) + (11) (The arrow should

point toward the dot.)

The parts numbers used below are for the Racer 521. As the part numbers and dihedral angle may change according to the model, be careful when CAUTION 1

> 9+0 Underside of

CAUTION 2 you use these instructions for other models

When constructing the Racer 522, start with step 0.

Glue parts together in the order indicated

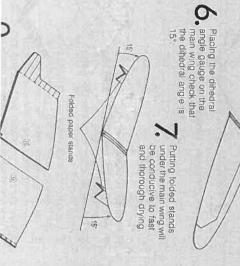
Glue parts (()) and (()) to the undersides of parts (()) and (()) respectively. When dry, cut off the protruding portions

In the same manner as in 4 attach (a) + (b) to the other side of (2)



Dots toward the front

Using a ruler along the center line fold part (1) from the center line to make a 15° angle on both of the fuselage top where the main wings are to be attached. sides. Then curve it carefully with your fingers to fit the curved edge



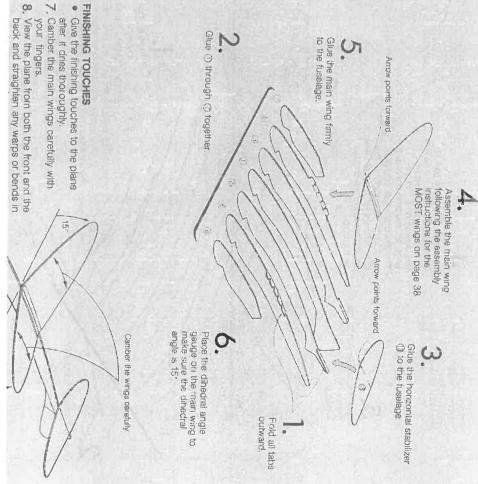
Curve the main wings, (®) + (®) and (®) + (®) respectively, in the manner shown in the figure on page 9. This curve is

Racer 521 50 53 JACQUELINE

Jacquelina Cochran (1910–1980).
Soon after her first fying Jessons in 1932, Jacqueline mastered the technical aspects of aviation and havigation. She was the first woman to enter the Eentik. Finiscontinental Air Raise in 1935, and captured the Bendix Trophy in 1936. in 1938.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



HOW TO ASSEMBLE THE MOST WINGS

shaped surface in math, I call this type of wing a MOST (Modified Saddle Type) wing. It is of the wing. Because the shape of the central constructed as follows. featuring a uniform camber along the length Series have a high performance main wing part of the wing resembles a so-called saddle Three of the racer type planes in this Heritage

The parts numbers used below are for the Racer 521. As the part numbers and dihedral angle may change according to the model, be careful when CAUTION 1

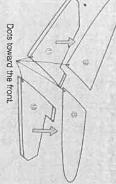
you use these instructions for other models

CAUTION 2

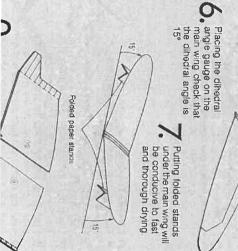
When constructing the Racer 522, start with step 0

Glue parts together in the order indicated

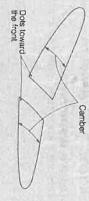
Glue parts (i) and (ii) to the undersides of parts (ii) and (iii) respectively. When dry, cut off the protruding portions



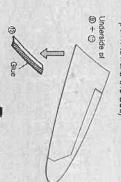
fold part @ from the center line wings are to be attached of the fuselage top where the mair sides Then curve it carefully with to make a 15° angle on both Using a ruler along the center line your fingers to fit the curved edge



Curve the main wings, (a) + (b) and (a) + (b) respectively, in the manner shown in the figure on page 9. This curve is called camber.



Apply glue on half of the underside of (2) and glue onto (3) + (1) (The arrow should point toward the dot.)



Glue In the same manner as in 4 attach (8) + (19) to the other side of (19)

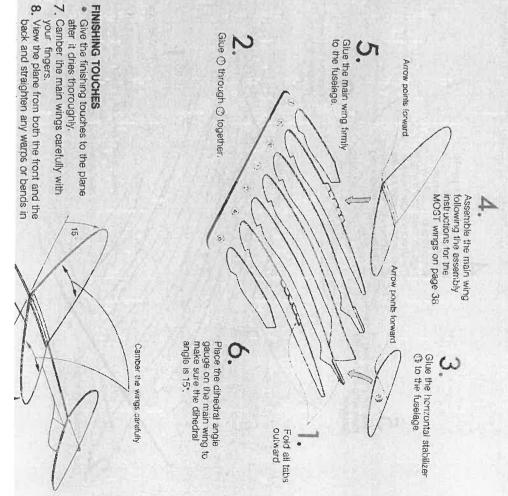
Racer 521 JACQUELINE

Jacqueline Coentan (1910—1960)

Soon after her first flying lessons in 1982, Jacqueline mastered the technical aspects of aviation and havigation. She was the first woman to enter the Bendix Treinscontinental Air Race in 1935, and captured the Bendix Trophy

GLUING INSTRUCTIONS

Glue the parts together in the order indicated



Racer 522 RICHARD T.

Richard fra Bong (1920–1945)
Though his career was short-lived, Richard soon established himself as a squedron leader and an ace flyer during World War II. He was awarded the Medal of Honor for his elforts during the war and is remembered for his gallarity.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

Glue the middle part of the main wing firmly to the fuselage

Arrow points forward

Arrow points forward.

are different from those listed on page 38. The dihedral angle, however, must be 5° Be careful as the part numbers for the main wing page 38, starting with step 0. Assemble the middle part of

Glue the horizontal stabilizer @ to the fuselage.

outward. Fold all tabs

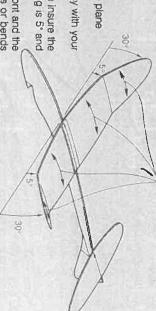
> Dot toward the front make sure the dihedral angle is 5°. Place the dihedral angle gauge on the main wing to Dot loward the front Camber the wing tips carefully 30° check that the dihedral angle at the tip of the wing is 30°, using the gauge Apply glue to the top surface of the folded tabs of the main (b) respectively. Once again, wing. Attach wing tips (1) and Camber both wing tips (1) and (1). Fold tabs on both ends of the main wing to form a 30° dihedral angle camber them as well. using the gauge and then

FINISHING TOUCHES

- 9. Camber the main wings carefully with your Give the finishing touches to the plane after it dries thoroughly.
- 10. Using the dihedral angle gauge insure the dihedral angle for the main wing is 5° and fingers.

Glue (1) through (8) together

11. View the plane from both the front and the back and straighten any warps or bends for the wing tips 30°.



Camber the wings carefully.

Racer 523 "BILLY"

William "Billy" Mitchell (1879—1935)
An outspoken proponent of the use of Military Air Power, "Billy" began his career as a private and advanced to the rank of brigadier general hie is known as the first American aliman to fly over enemy lines.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated

Assemble the main wing following the assembly instructions for the MOST wings on page 38. Be careful as the part numbers for those listed on page 38. the main wing are different from

Glue the tail section (①+⑤+⑥) firmly to the fuselage.

horizontal stabilizer (i) aligning the arrows on (b) and (b) with the folded tab lines of (c) (5) and (6) to the tabs of the Glue the vertical stabilizers Arrows point forward. (B) as shown

Fold both tabs of the horizontal stabilizer

to the fuselage. Give the main wing firmly

TATE

Arrow points forward

on the main wing to make sure the dihedral angle is 15°. Place the dihedral angle gauge

outward. Fold all tabs

Camber the wings carefully

Glue (1) through (8) together.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- back and straighten any warps or bends in View the plane from both the front and the



TRIANGULAR LONG FUSELAGE ASSEMBLY INSTRUCTIONS FOR THE

name. performance makes it worthy of the Whitewings to bending and twisting. Its aerodynamic and designing a fuselage that accomodates the sturdy, and has little air resistance or drag.
This is especially true of larger paper airplanes A truly high performance paper plane is light, the triangular long fuselage which is resistant The result of these efforts was the invention of body construction of a larger paper airplane That is why I have spent some time researching

The triangular long fuselage is resistant to both bending and twisting.

Table knife Auler

Make firm creases along the dashed lines of fuselage pieces (① & ②) using a common ordinary table knife (blunt knife) and a ruler as a guide. Avoid cutting through the dashed lines

Make firm creases along the dashed lines

Spread glue evenly over the entire surface of printed side of O Apply O to the unprinted side of O Make very sure that the edges of O and O that diagram. evenly, or flush, as shown in the form the plane nose are placed together

Make very sure that the edges of Oand n are placed together eventy 3 Uniprinted side Unprinted side

Before the glue dries, fold ① and ② along the creased dashed lines having

Spread glue along the itiner edges

section as shown. complete the formation of the cross Glue the inner edges together to

Cross section

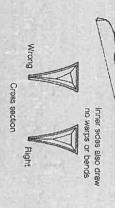
the glue dries Look inside of the fuselage no warps or bends. to make sure the inner sides also draw straighten any warps or bends before the front and back and carefully View the fuselage closely from both



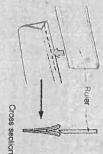
Let the fuselage dry completely by least 2 hours to dry attaching clips or clothespins on the glued edges as shown. It takes at

the plane nose than at any other part. The remaining area of the top of the fuselage, except for the thick dashed. groove must be deeper at the tip of pressing down upon it with a ruler. The line at the plane nose by carefully line, should remain flat. Make a groove along the thick dashed

Put glue into the groove at the tip of the plane nose and both inner sides of the plane nose and glue together. Let it dry thoroughly (at least 2 hours) using a cip to keep the tip of the nose







align the center line of the main wing on the fuselage. Make sure to to the gluing position for the main Glue the main wing (3+@) furnly

Arrows point forward

wing with the center line on the

Gluing position for the main wing

on the fuselage.

stabilizer (5) with the center line center line of the horizontal fuselage. Make sure to align the the horizontal stabilizer on the firmly to the gluing position for

Gluing position for the horizontal stabilizer

Glue the tail section (5+6+0)

Cross section



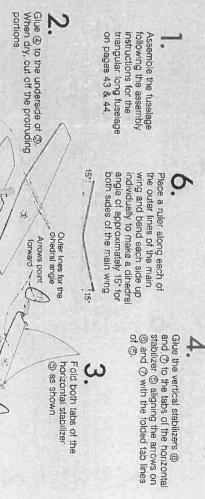
Cross section

TriLinear 701 LINDBERG

Charles Lindberg (1902—1974)
Well-Known plot of the Spirit of St. Louis, "Lucky Lindy" made the first solo nonstop transetlantic flight. He became a respected aviation consultant, won a Pulitzer Prize for his autobiography, and was awarded a Congressional Medel of Henor

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 00 Camber the main wings carefully with your fingers.
- 9. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 15°
- 10. View the plane from both the front and the back and straighten any warps or bends in



TriLinear 702 RICKENBACKER And Persua squadran and was awarded the Congressional

Known as 'Eddle", this American aviator's interest with machines Edward Vernon Rickanhacker (1890-1973)

Glue the parts together in the order indicated GLUING INSTRUCTIONS

instructions for the following the assembly Assemble the fuselage

triangular long fuselage on pages 43 & 44

ooth sides of the main wing ingle of approximately 15° for ving and bend each side up The outer lines of the main lace a ruler along each of

(⊚+(∑) to the gluing position for the vertical stabilizer on the the ruselage. stabilizer with the center line on the folded tab line of the vertical Glue the vertical stabilizer fuselage. Make sure to align

> a 90° angle and then cut off the protruding portions,

Fold () along the dashed line at

Fold the tab of the vertical stabilizer ©. Glue O to the other side of the vertical stabilizer (5)

Glue (a) to the underside of (a). When dry, cut off the protruding

portions.

Glue the horizontal stabilizer (f) firmly to on the fuselage. the horizontal stabilizer the gluing position for

Outer lines for the dinedral angle

Gluing position for the vertical stabilizer Gluing position for the horizonial stabilizer.

Arrow points torward

o align the center line of the main ving on the fuselage. Make sure ving with the center line on the

Gluing position for the main wing

Stue the main wing ((3+4) firmly o the gluing position for the main

Arrows point tonward

When dry, cut off the protruding.

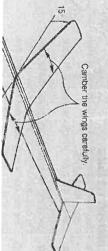
Blue (4) to the underside of (7)

5

or tions.

INISHING TOUCHES

- it dries thoroughly, Give the finishing touches to the plane after
- Camber the main wings carefully with your fingers.
- Using the dihedral angle gauge make sure the dihedral angle for the main wing is 15°
- I. View the plane from both the front and the back and straighten any warps or bends in



TriLinear 703 CHENNAULI

became a specialist in wartime aviation. Because of this expertise, he was recruited by the Nationalist Chinese to train and organize their air defense forces which became known as the "Flying Tigers". Clare Lee Chennault (1890—1958)
Owing to a detailed study of pursuit maneuvers and factics, he

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

on pages 43 & 44. triangular long tuselage instructions for the following the assembly Assemble the fuselage

both sides of the main wing. angle of approximately 15° for wing and bend each side up the outer lines of the main Place a ruler along each of

(a) and (2) with the folded tab lines of (5). and (7) to the tabs of the horizontal stabilizer (5) aligning the arrows on

z, dihedral angle forward Arrows point

as shown

Fold both tabs of the horizontal stabilizer

Arrows point forward.

Glue the main wing (@+@) firmly to the gluing position for the main wing on the fuselage. Make sure to align the center line of the main fuselage. wing with the center line on the

stabilizer

Gluing position Give the day secure (@T@T@To for the horizontal firmly to the gluing position for stabilizer (5) with the center line Glue the tail section (6+6+0) center line of the horizontal on the fuselage ruselage. Make sure to align the the horizontal stabilizer on the

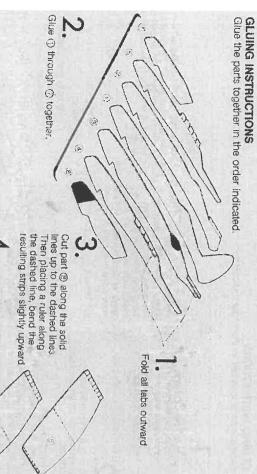
Gluing position for the main wing

FINISHING TOUCHES

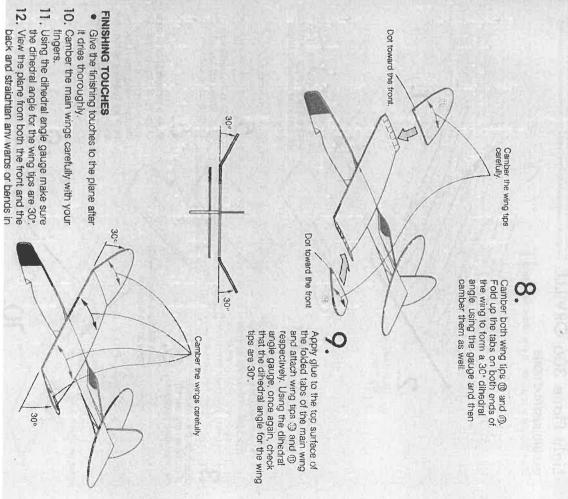
- Give the finishing touches to the plane after it dries thoroughly.
- 00 Camber the main wings carefully with your fingers.
- 9 Using the dihedral angle gauge make sure the dihedral angle for the main wing is 15°
- Ö, View the plane from both the front and the back and straighten any warps or bends in

Camber the wings carefully





Glue the main wing (@+@) firmly to the fuselage. Arrow points forward carefully with your fingers. Camber the main wing (6+9) Glue (a) to the underside of (b). When dry, cut off the protruding portions. Arrows point forward



Light Plane 306 ORVILLE his profifer imagination and the help and encouragement of his brother.

Glue the parts together in the order indicated.



slightly upward. Cut part ® along the solid lines up to the dashed lines. Then placing a ruler along the dashed line bend the resulting strips

á,



Camber the front wing (@+@) in line with the curved tabs for the front wing on the fuselage.

Glue (9) to the underside of (8). When dry, cut off the protruding portions

Arrows point v

Glue (3) to the underside of (3). When dry, cut off the protruding portions.

00

firmly to the fuselage Glue the front wing (@+@)

of the center line on the top side of the main wing. Turn the main wing over, Link the bottom side of the main wing. and draw a center line on the pinholes together with a ruler Make a pinhole at both ends

Arrows point forward

carefully with your fingers. Camber the main wing (@+@)

Camber both wing tips of @ and @. Fold up the tabs on both ends of the wing to form a 35° dihedral angle using the gauge and then camber them

Dot toward the front

Dot toward the front

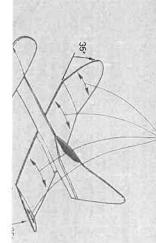
for the wing tips are 35°

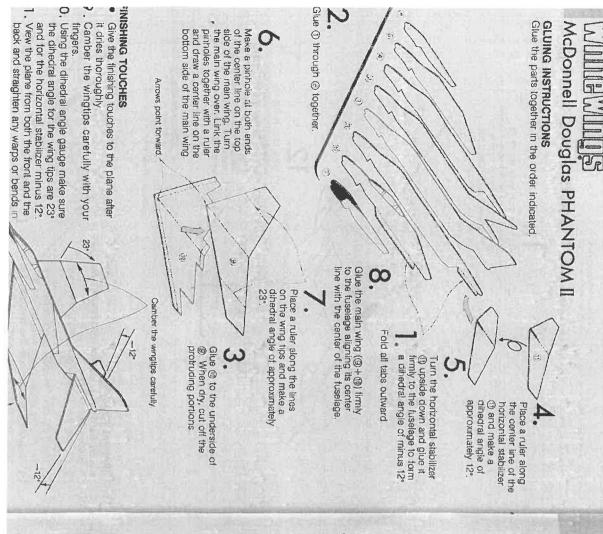
Camber the wings



FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- 13. Camber the main wings carefully with your fingers.
- 14. Using the dihedral angle gauge make sure
- 15 the dihedral angle for the wing tips are 35°. View the plane from both the front and the back and straighten any warps or bends in

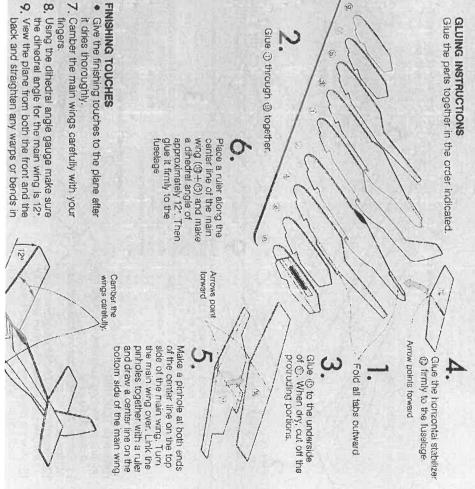


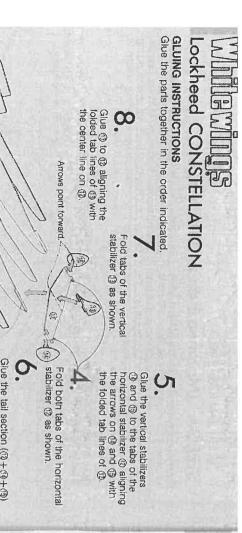


"STREGA" (Modified P-51 MUSTANG)

Each year, in September, the city of Reno holds a National Championship Air Race. (Reno is in the Nevada Desert about 220 miles northeast from San Francisco.) The Strega achieved a new race record with an average speed of 454 mph in the Reno Air Race in 1987. The

unlimited class is comprised of many racing models, including modified battle planes with great horsepower such as the Mustang, Bearcat, Corsair, and Sea-Fury, that were at work during World War II. The Strega, meaning "witch" in Italian, is a remodeled Mustang P-51.





Give the tail section (@+@+®) firmly to the fuselage.

Fold all tabs outward

Arrows point

forward

Sine (1) through (9) together

Place a ruler along the center line of the main wing (((0) + (0)) and make a dihedral angle of approximately 10°. Then glue wing. ends of the center line on the top side of the main over. Link the pinholes Make a pinhole at the both Turn the main wing

it firmly to the fuselage

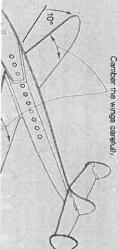
Glue (1) to the underside of (1). When dry, cut off the protruding portions.

together with a ruler and draw a center line on the

bottom side of the main

INISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.
- Camber the main wings carefully with your fingers.
- Using the dihedral angle gauge make sure
- ω back and straighten any warps or bends in View the plane from both the front and the the dihedral angle for the main wing is 10°



FINISHING TOUCHES

Glue (1) through (2) together

000

outward. Fold all tabs

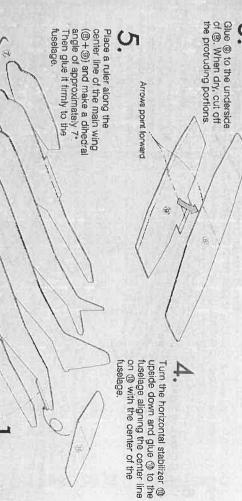
- Give the finishing touches to the plane after it dries thoroughly
- 6. Camber the main wings carefully with your
- 7. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 7°. 8. Fold (1) up slightly along the center line and
- glue it onto the center of the main wing.

 9. View the plane from both the front and the

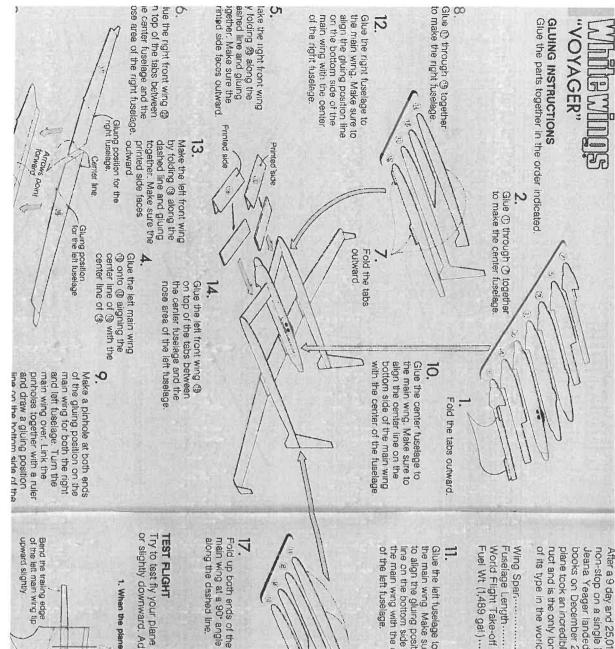
Arrow points forward Camber the wings carefully

Lockheed C130 HERCULES

GLUING INSTRUCTIONS Give the parts together in the order indicated.



- tingers.
- back and straighten any warps or bends in

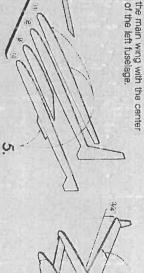


of its type in the world. Jeana Yeager landed the Voyager in the record books on December 23, 1987. This revolutionary non-stop on a single load of fuel, Dick Rutan and After a 9 day and 25,012 mile flight around the world ruct and is the only long range, fuel efficient aircraft plane took an incredible 22,000man hours to const

el Wt (1.489 gal.)	orld Flight Take-off Wt11,326 lbs	selage Length 25,4 ft	ing Span110.8 ft	
00		**********		
450	326	25	110	
50	bs	4 #	œ ;‡:	

Glue the left fuselage to

to align the gluing position line on the bottom side of the main wing. Make sure

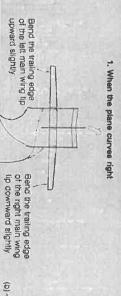


Fold the tabs outward

13%

6.
Glue (B) through (C) together to make the left fuselage.

or slightly downward. Adjust it in the order indicated to ensure a straight flight. Try to test fly your plane when there is as little wind as possible. Throw the plane gently either horizontally



2. When the nase goes up or down. (a) Bend the trailing edges of the front wing

- slightly upward
- (b) Ideal.
 (c) Bend the trailing edges of the front wing slightly downward



FINISHING TOUCHES

Give the finishing touches to the plane after it dries thoroughly.

Camber the main wings carefully with your

Bend the main wings up slightly at the The wing tips should be raised about 2cm make the dihedral angle for the main wing joints of both the right and left fuselage to tingers

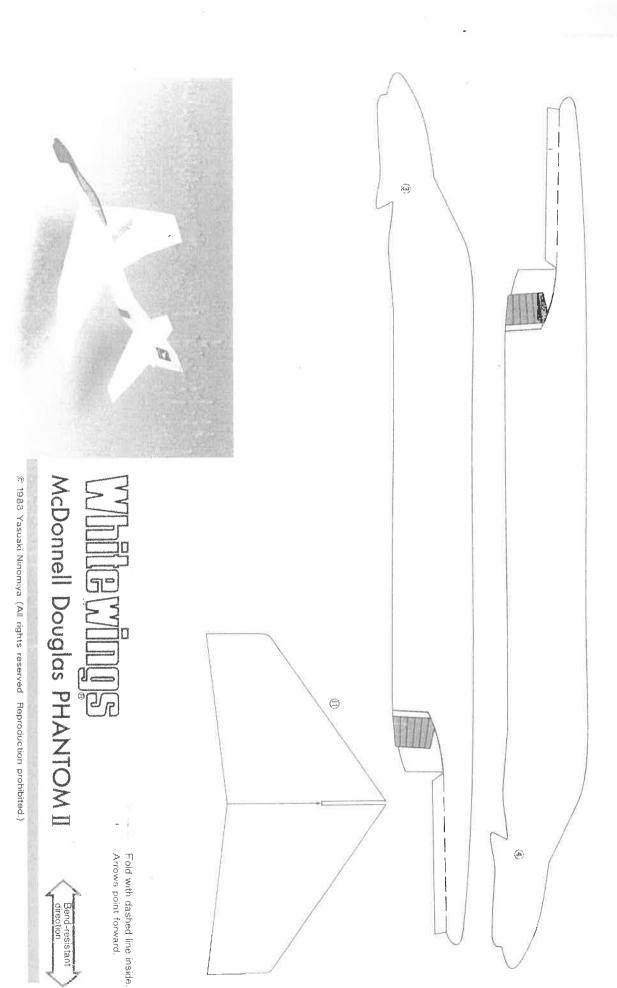
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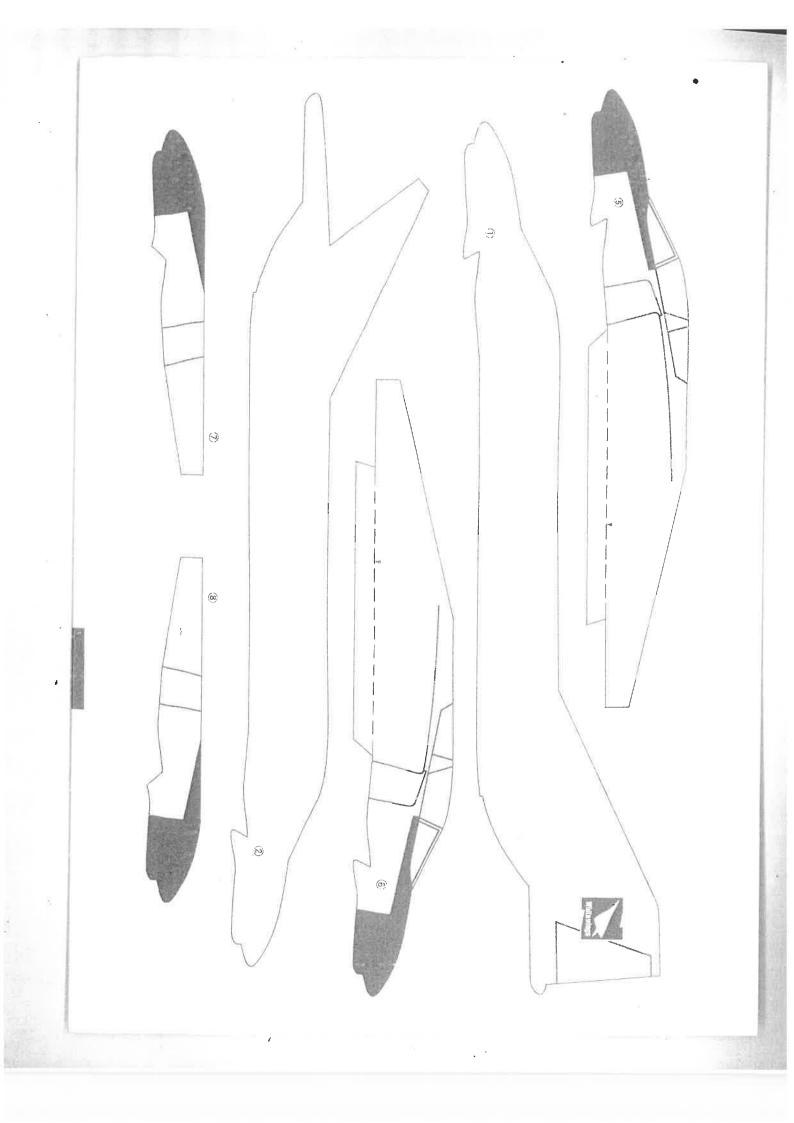
8

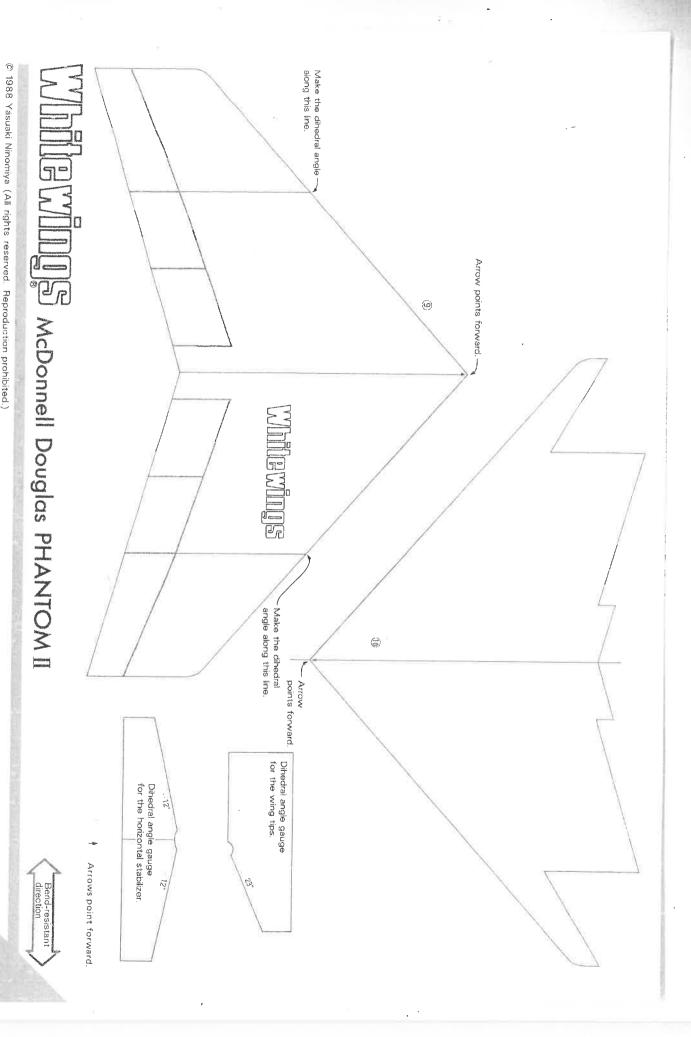
20. View the plane from both the front and the the fuselages and the wings. back and straighten any warps or bends in

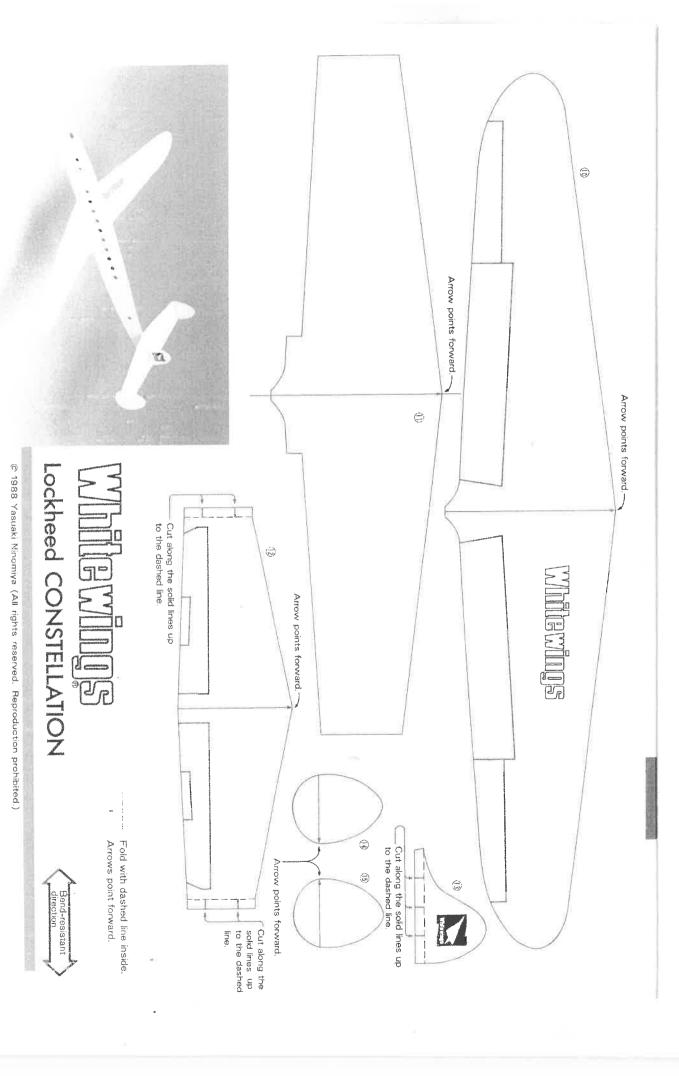
Camber the wings carefully

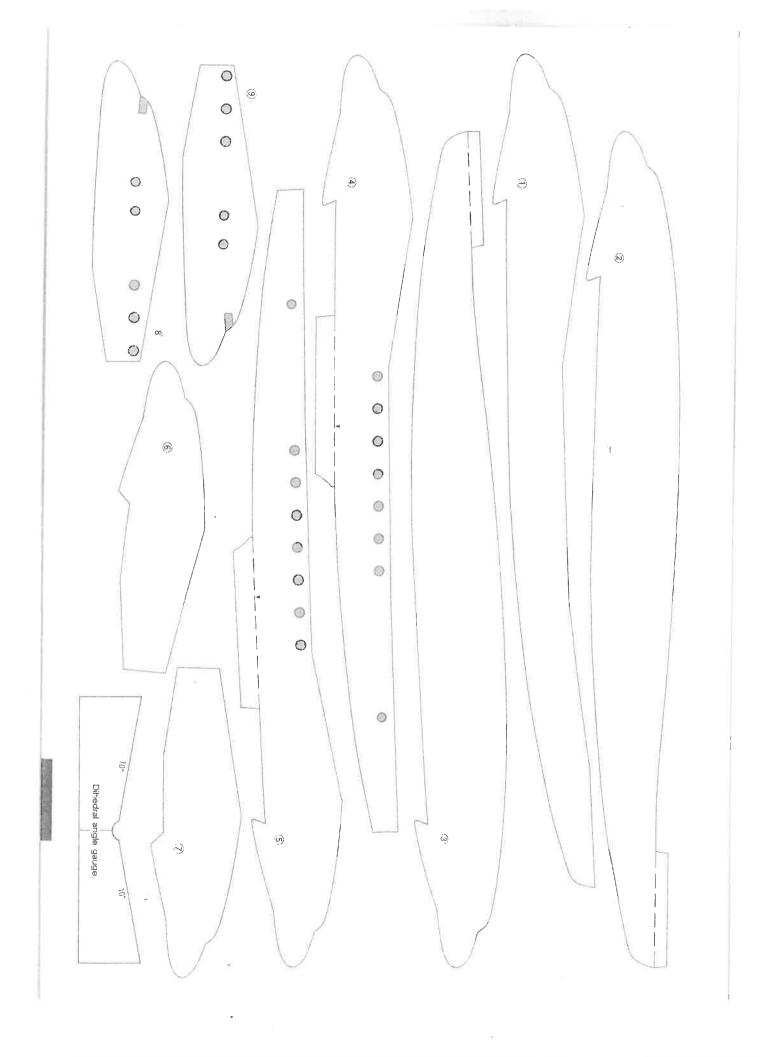
(3/4") from the horizontal level

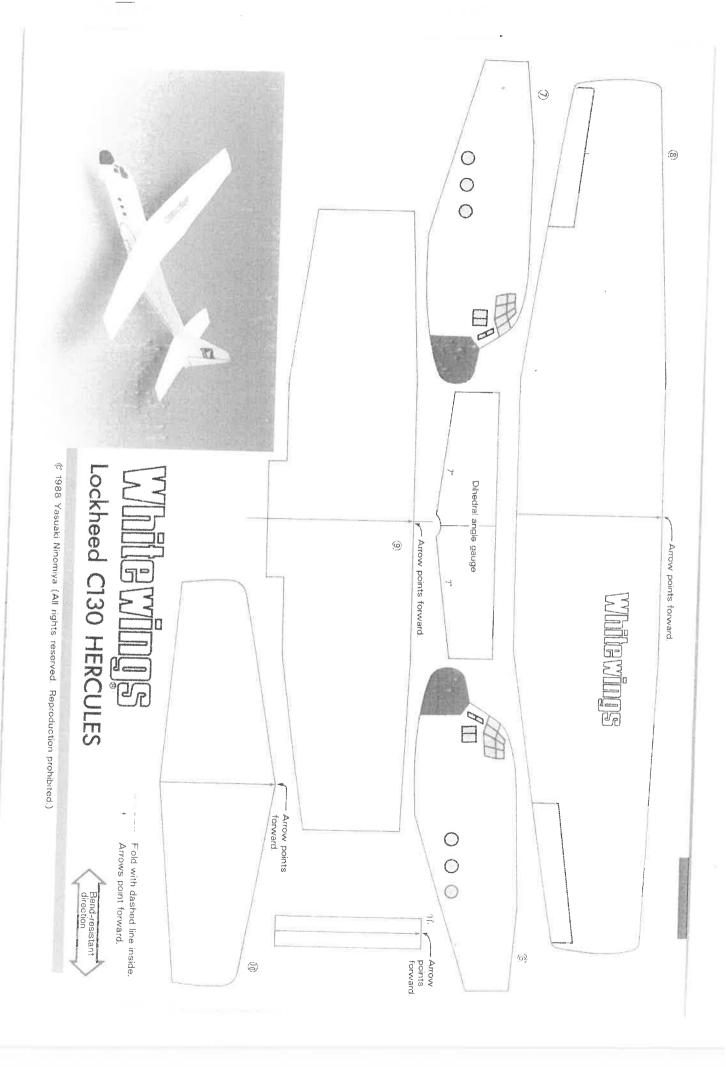


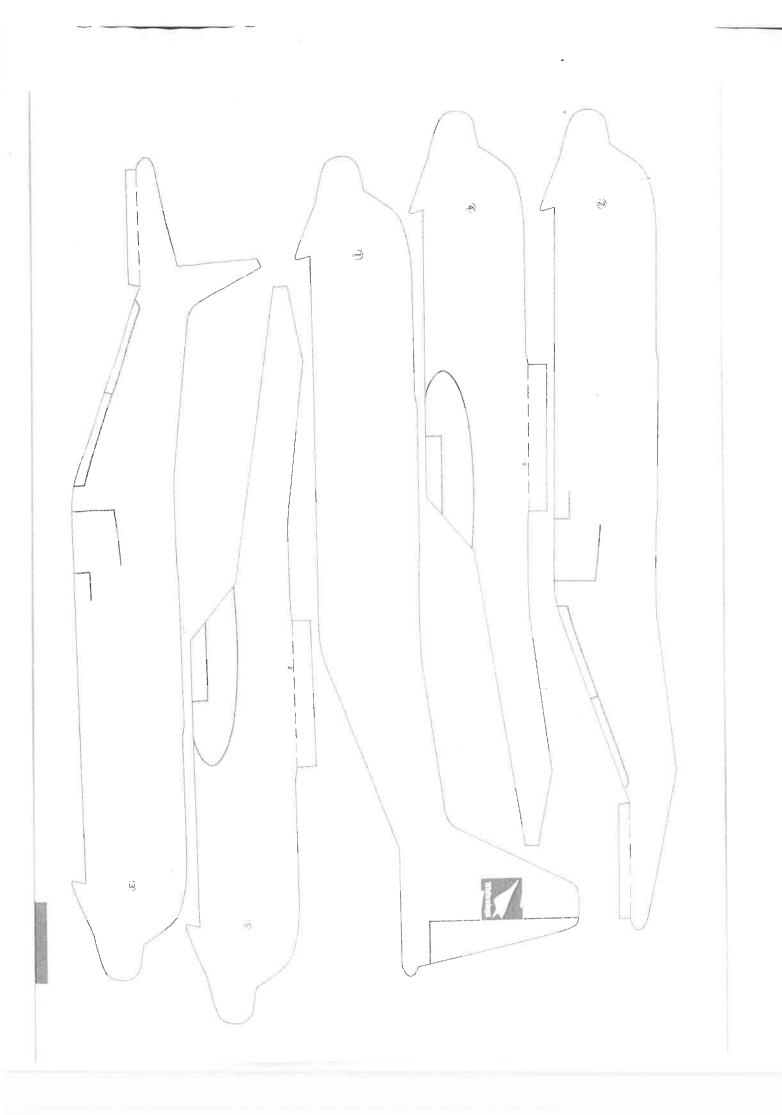


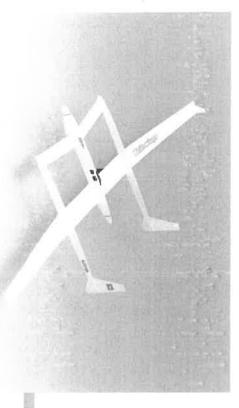












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MESSM

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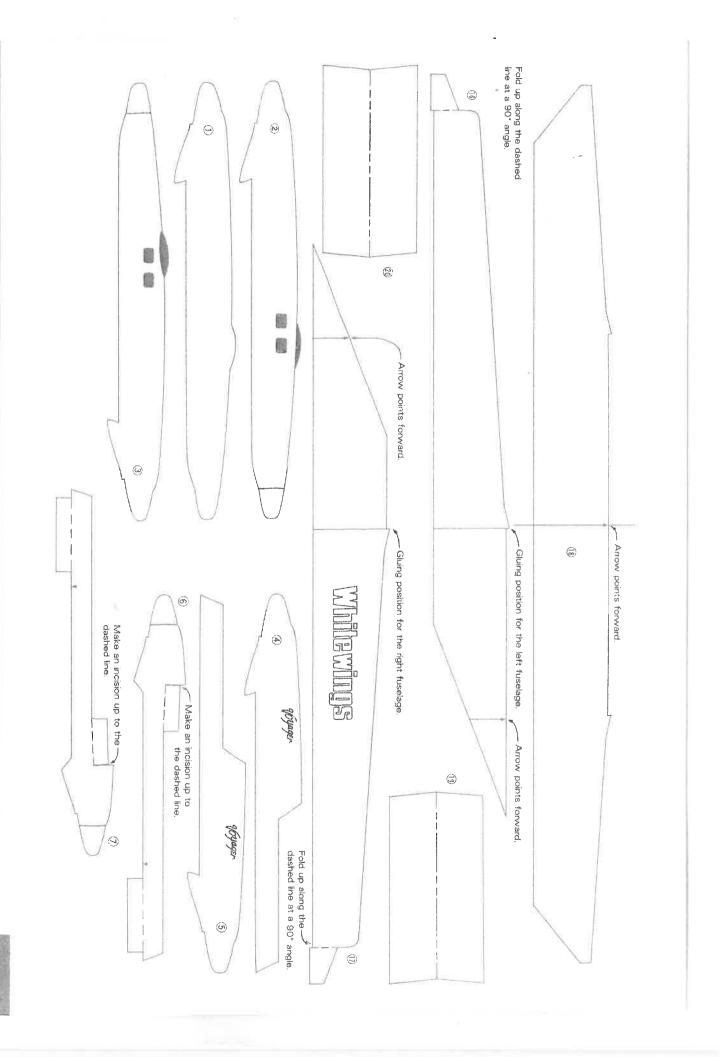
(3)

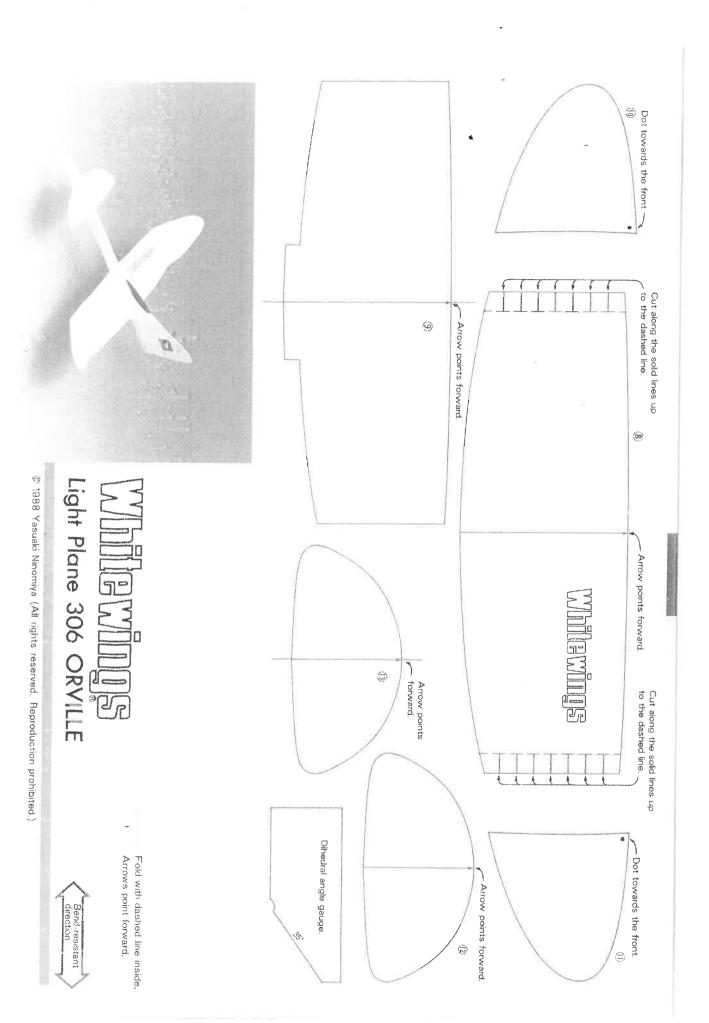
(3)

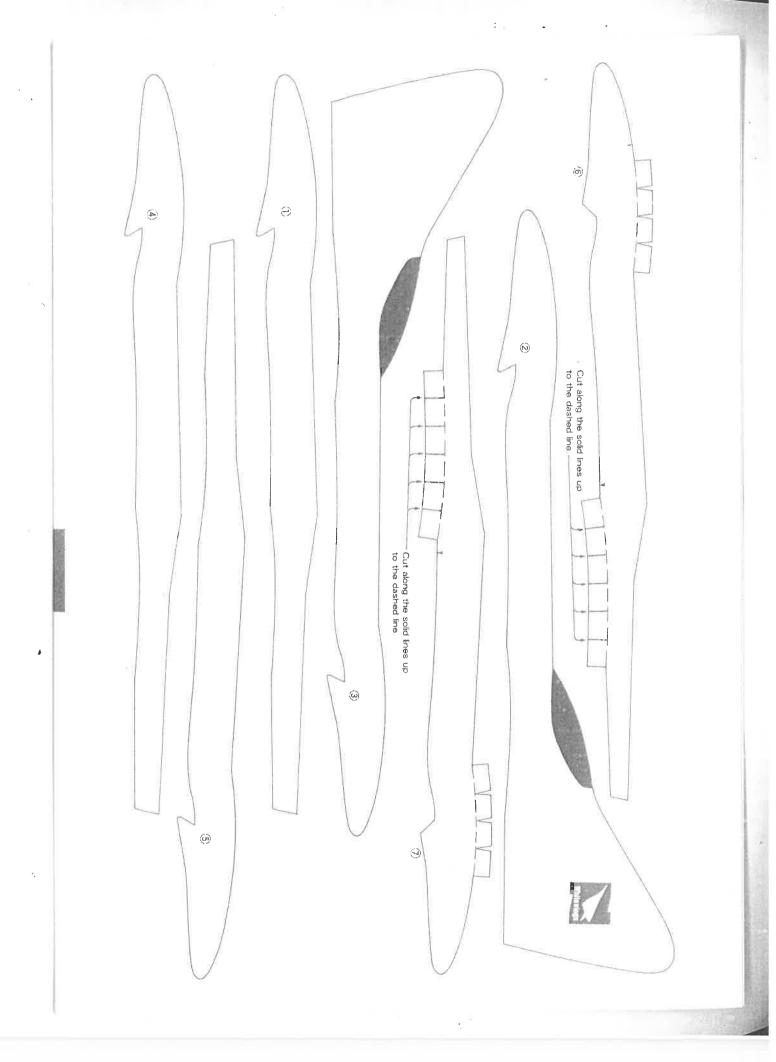


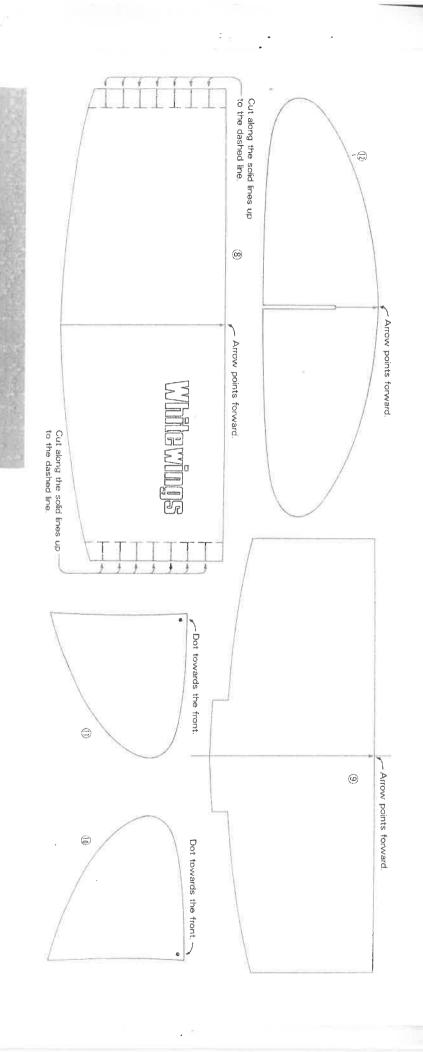
Fold with dashed line inside. Arrows point forward.







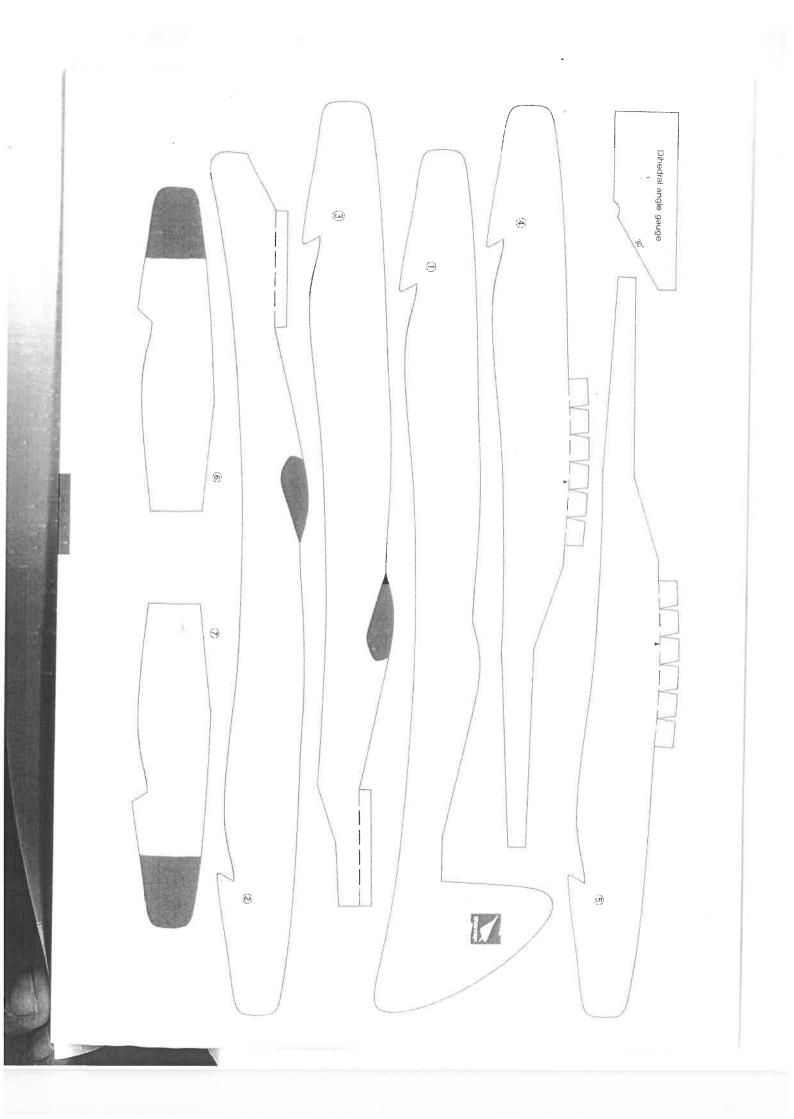


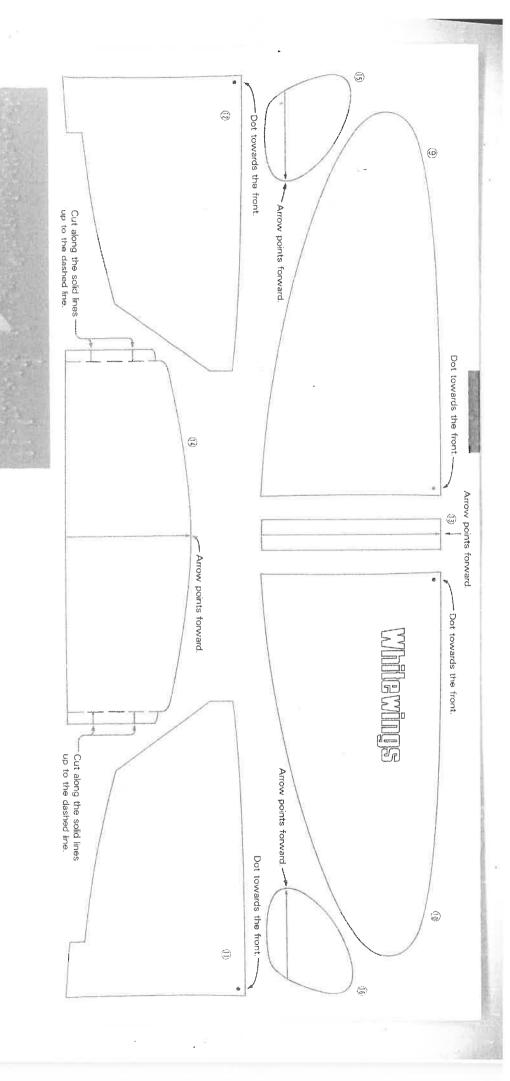




Fold with dashed line inside. Arrows point forward.



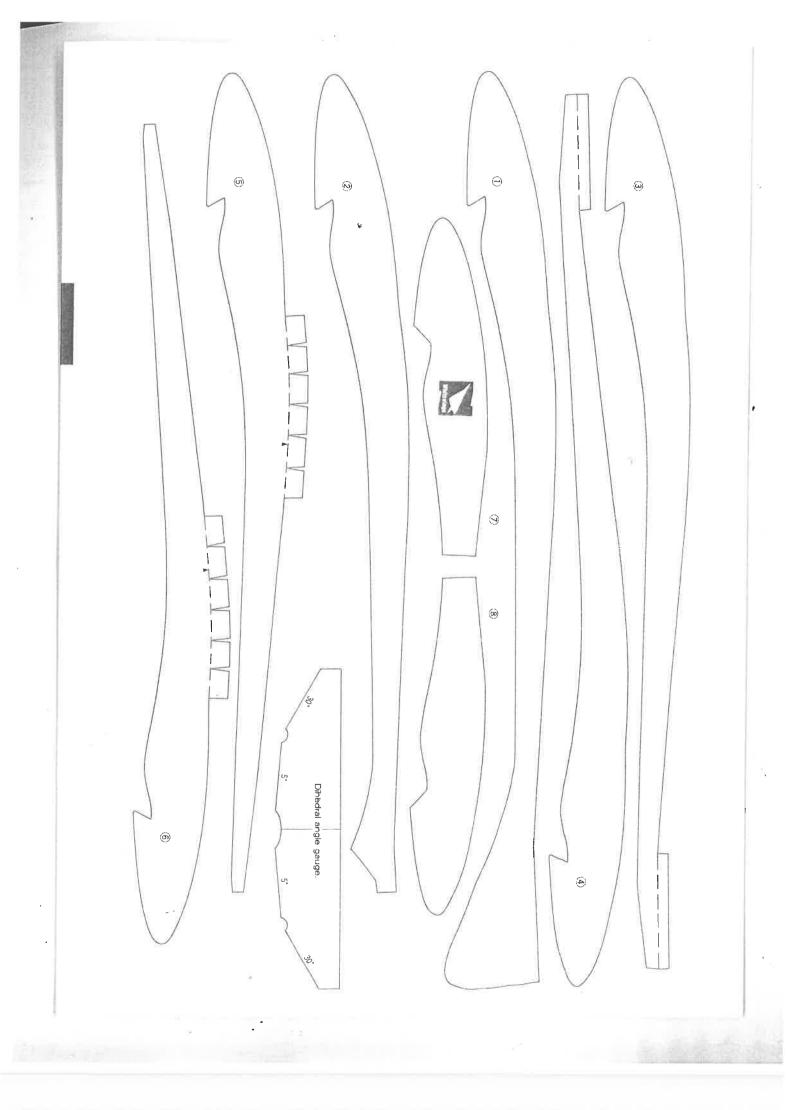


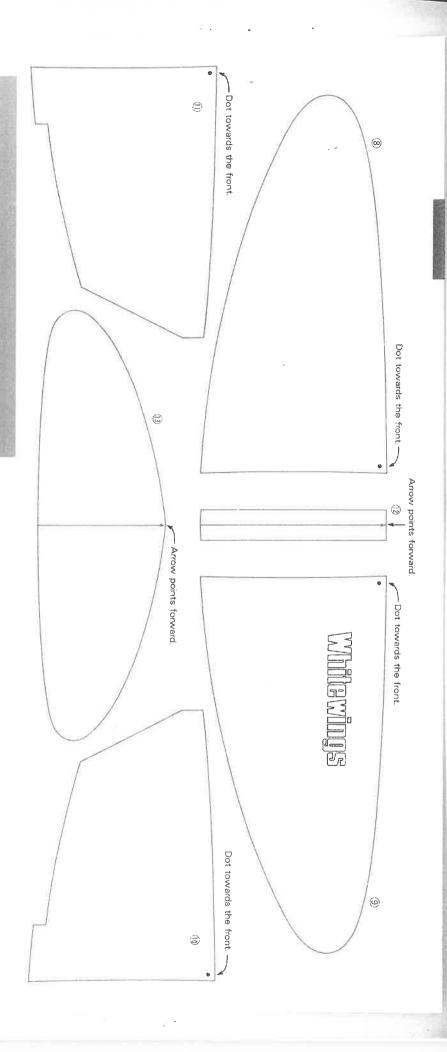




Fold with dashed line inside.
Arrows point forward.









Fold with dashed line inside.
Arrows point forward.



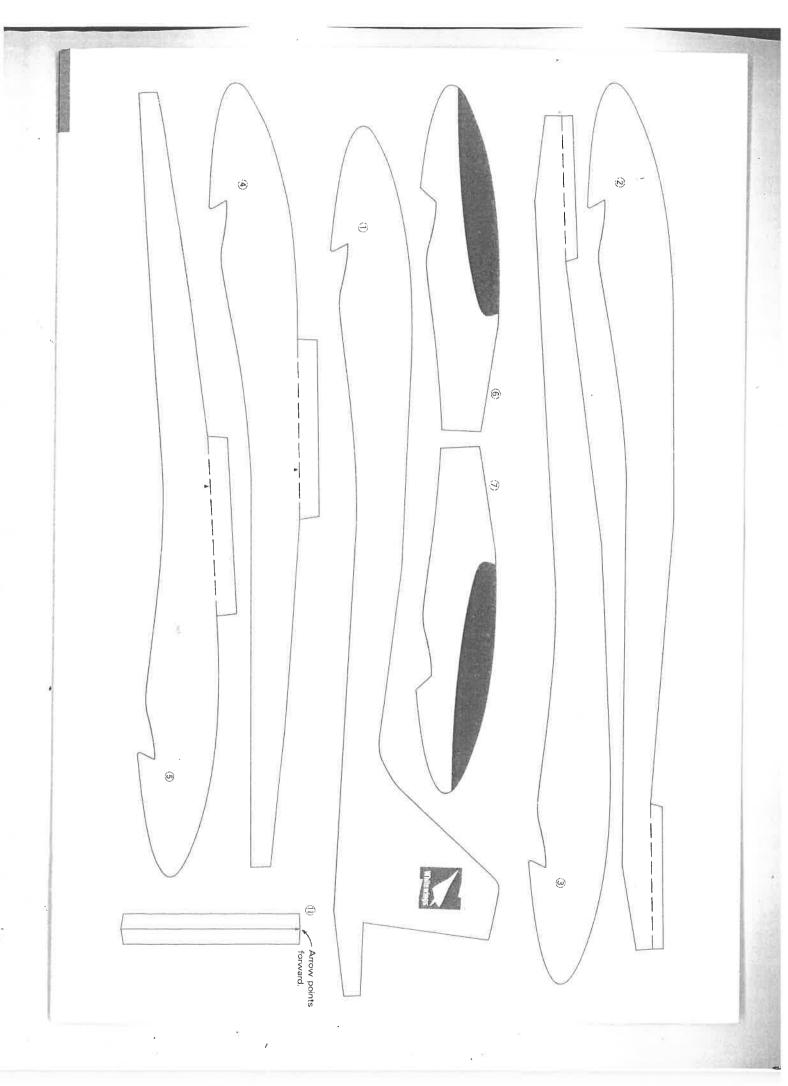


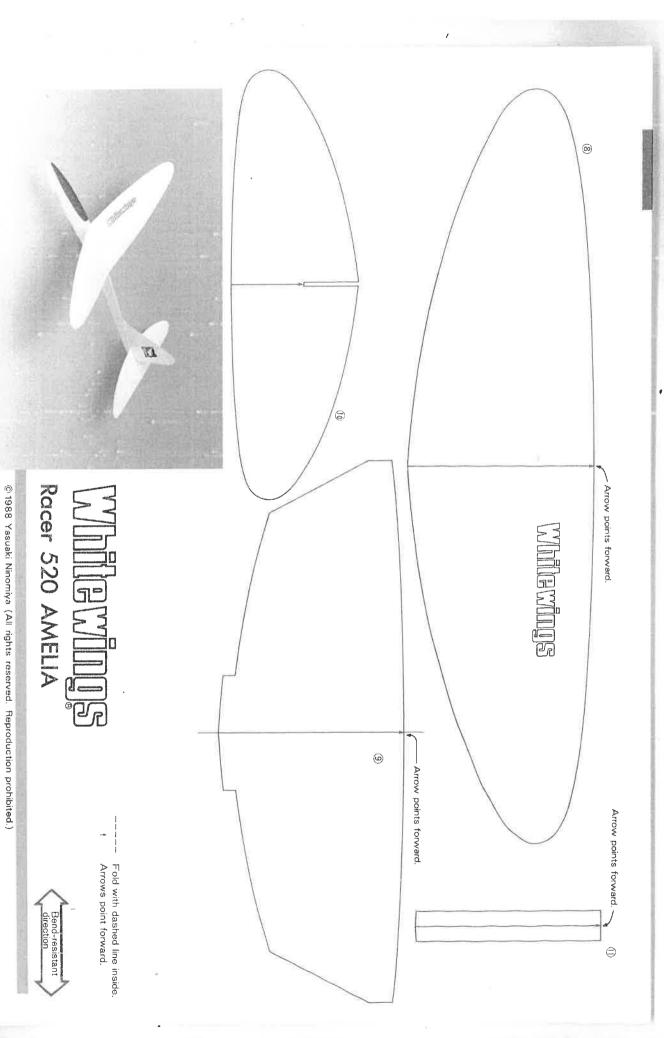
(60) Arrow points forward. Arrow points forward. Dihedral angle gauge.

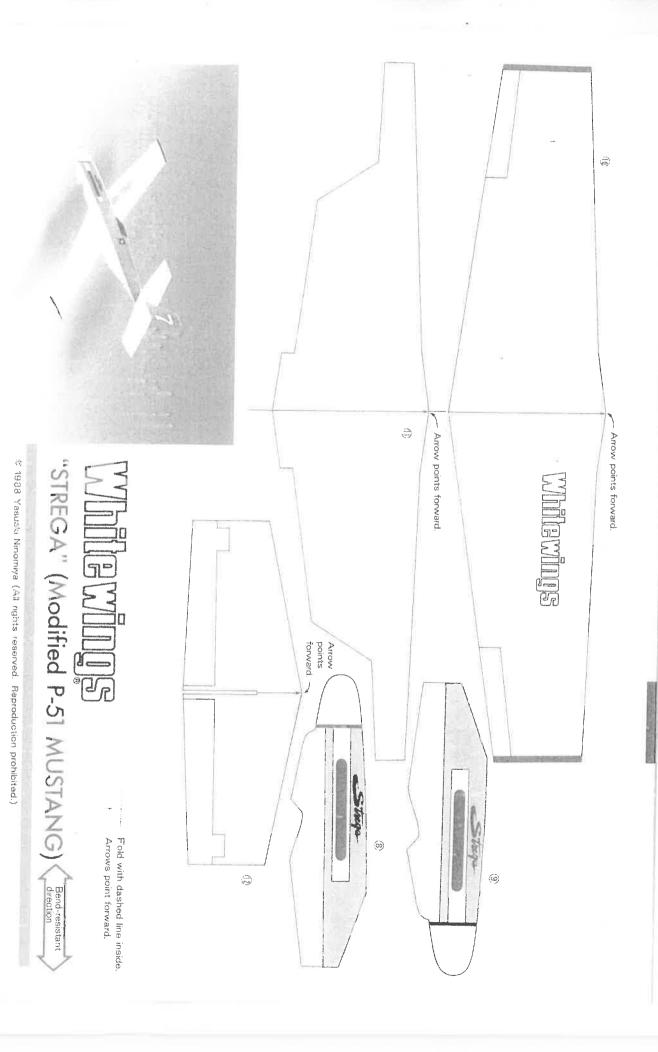
Racer 519 "PAPPY"

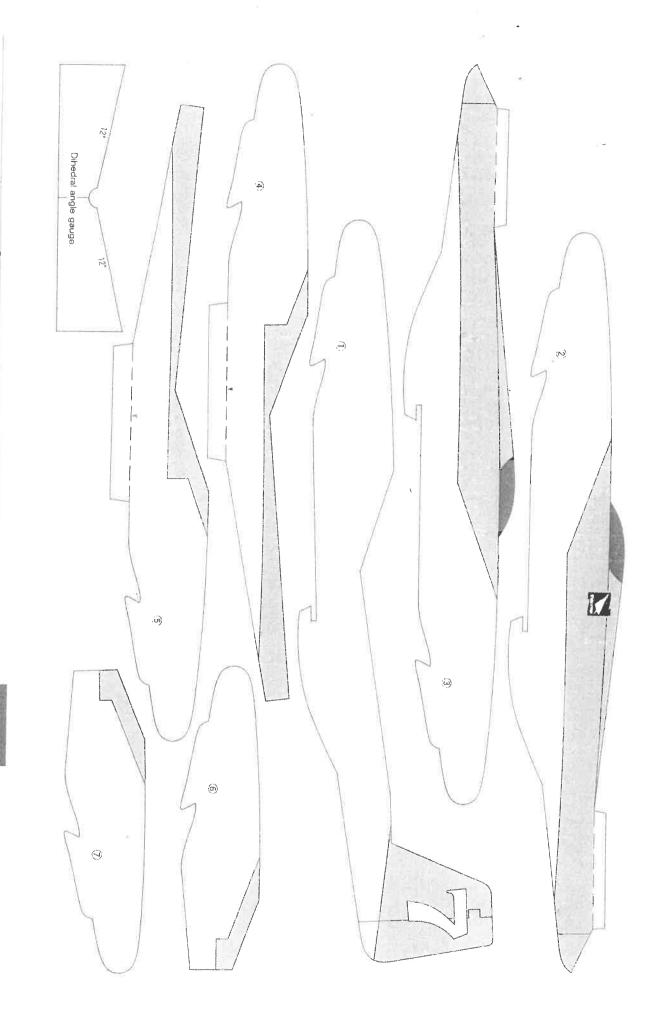
Fold with dashed line inside. Arrows point forward.

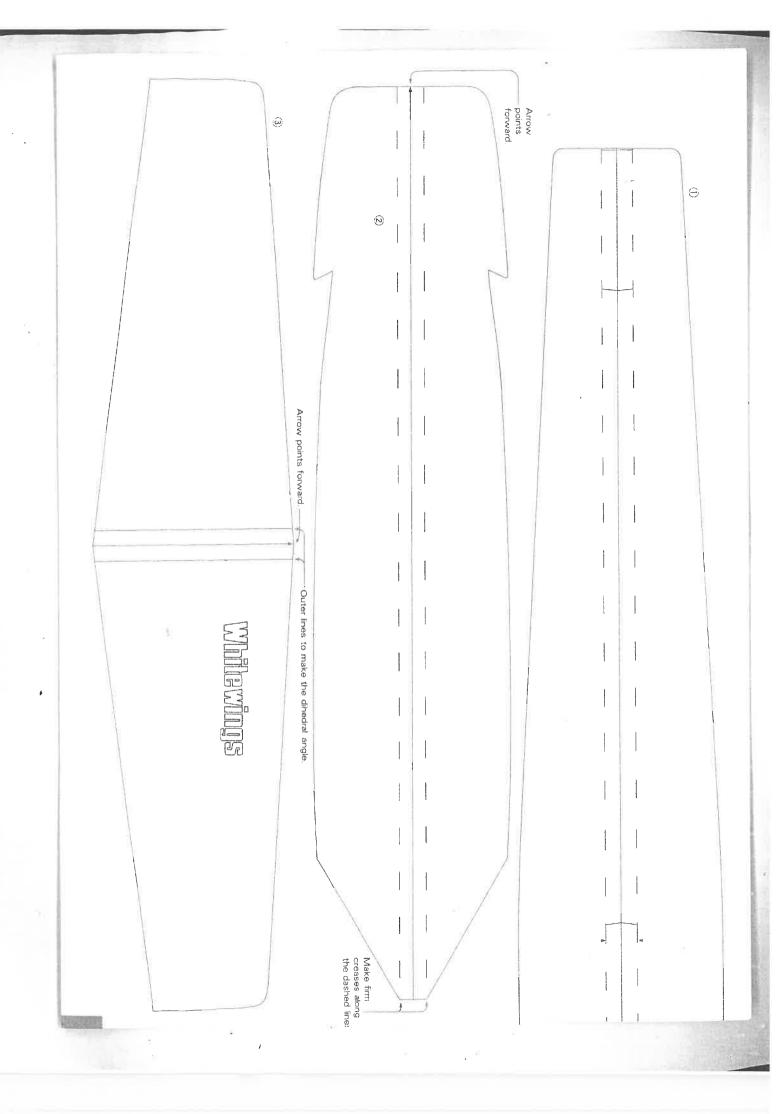
Bend-resistant direction

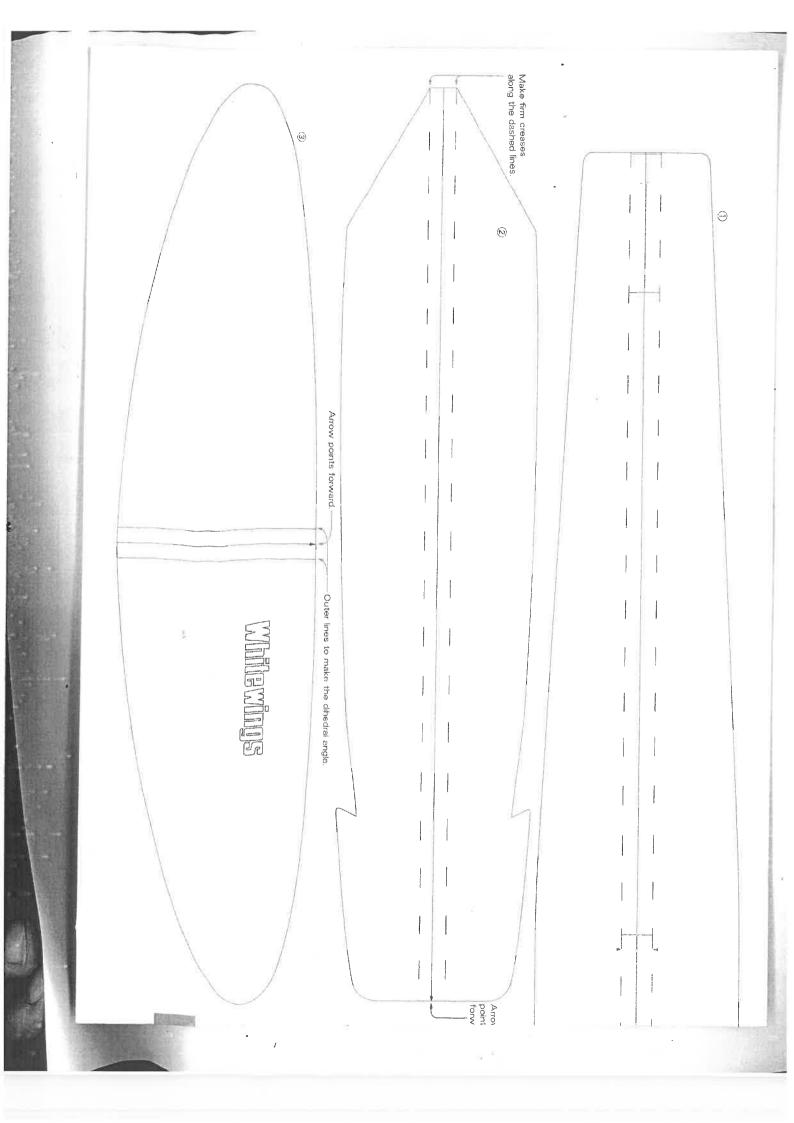


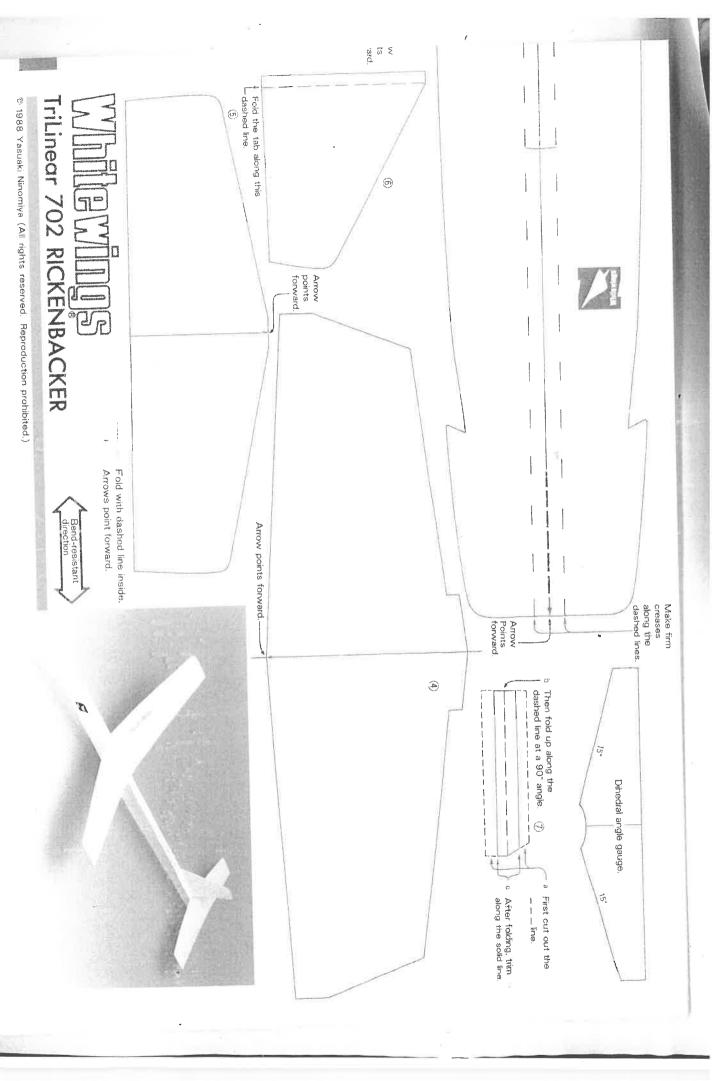


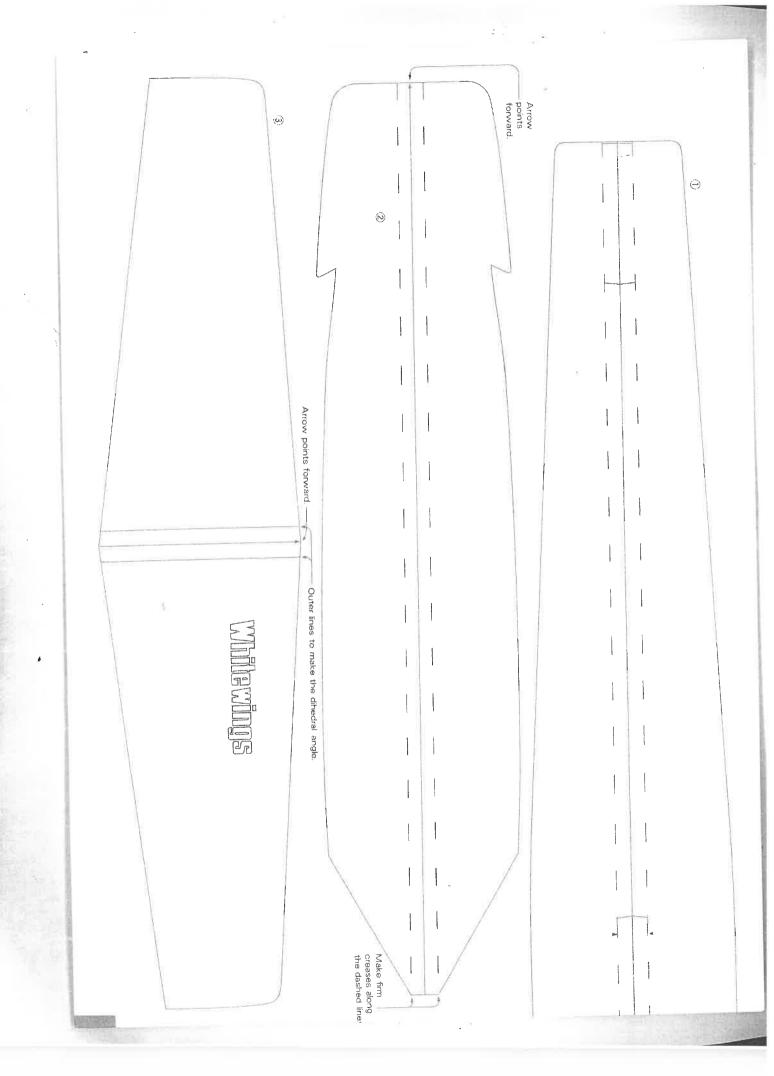


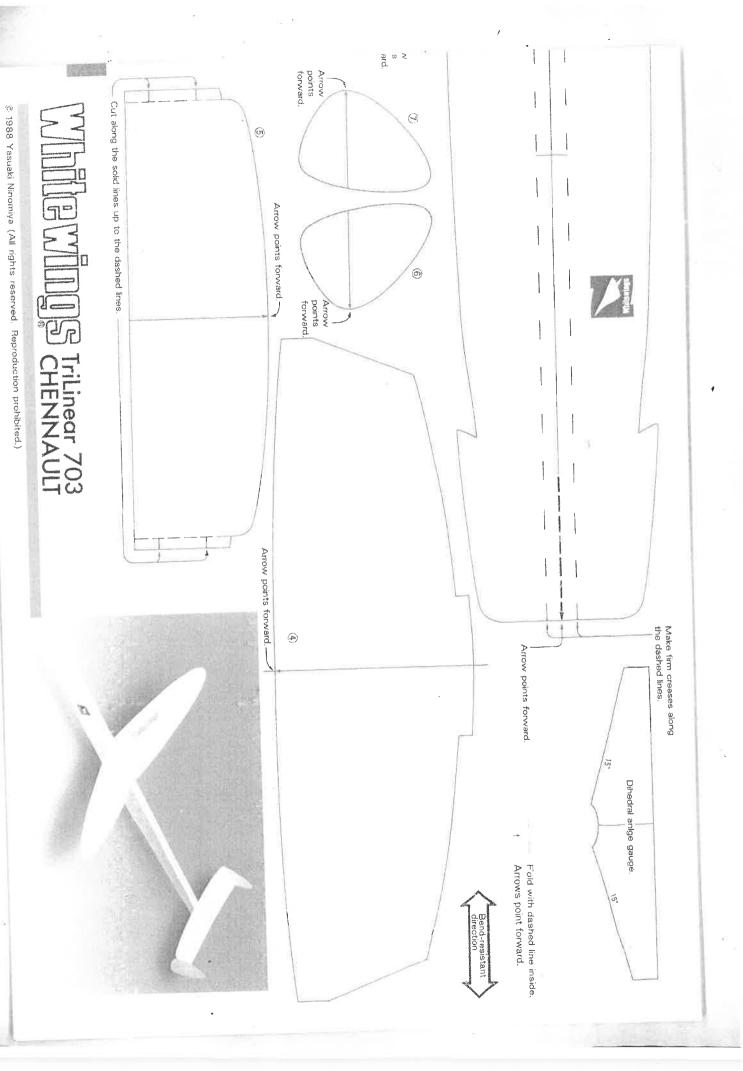


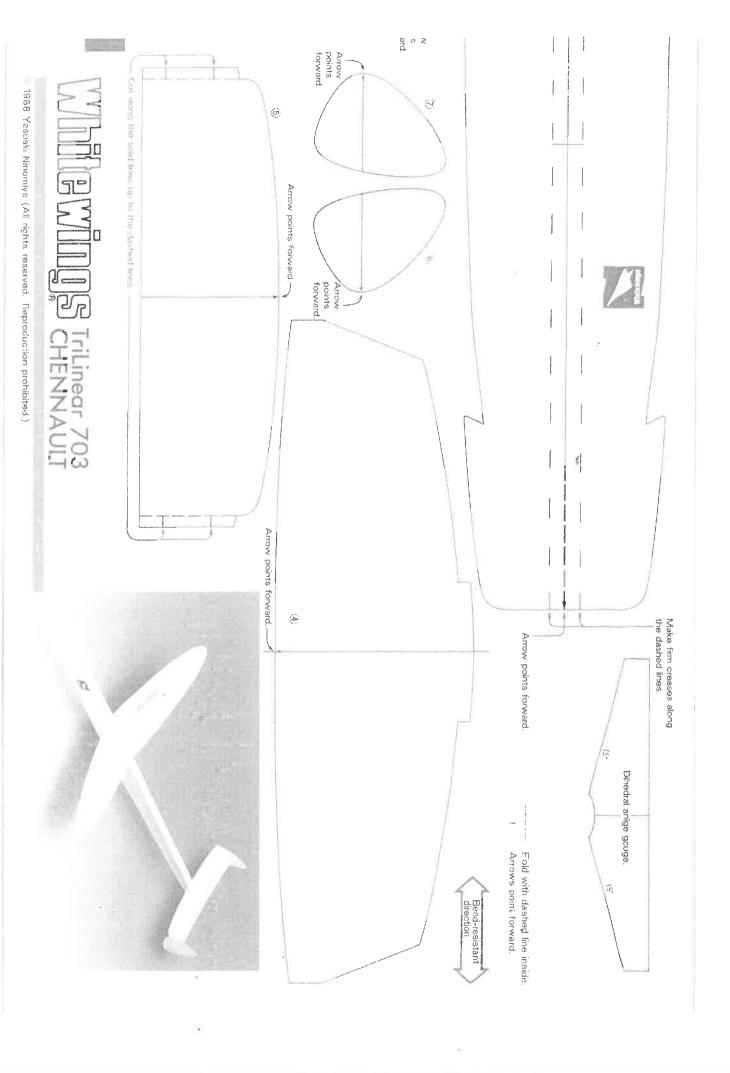


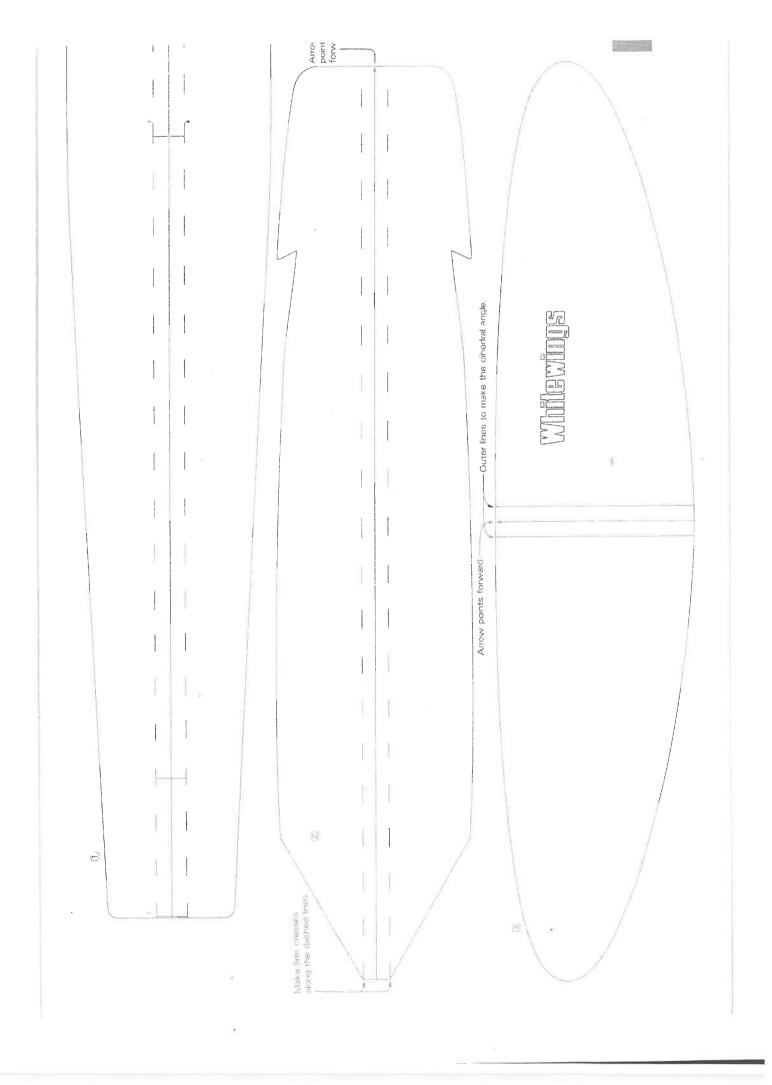


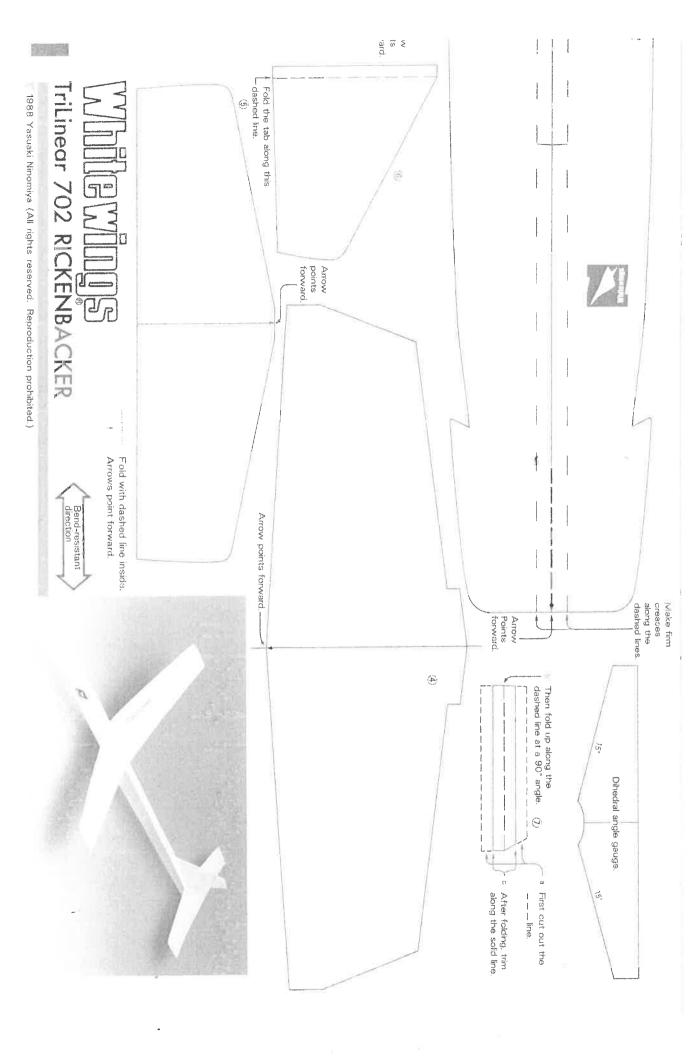


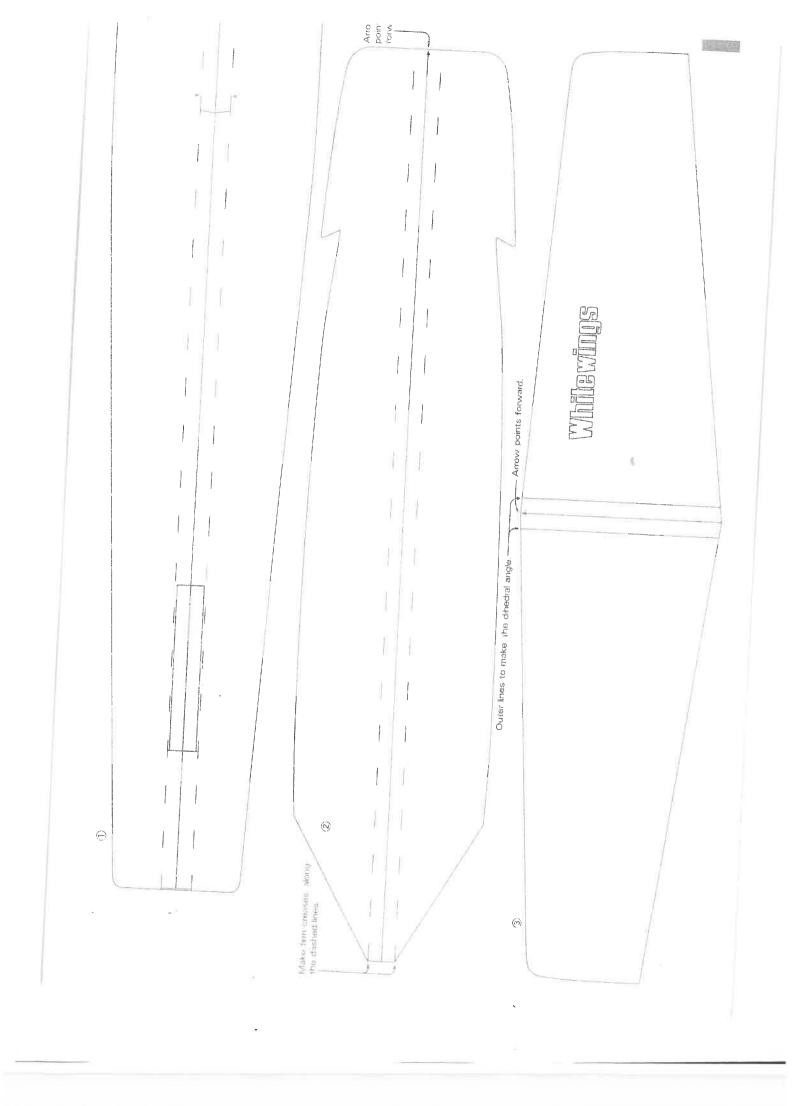


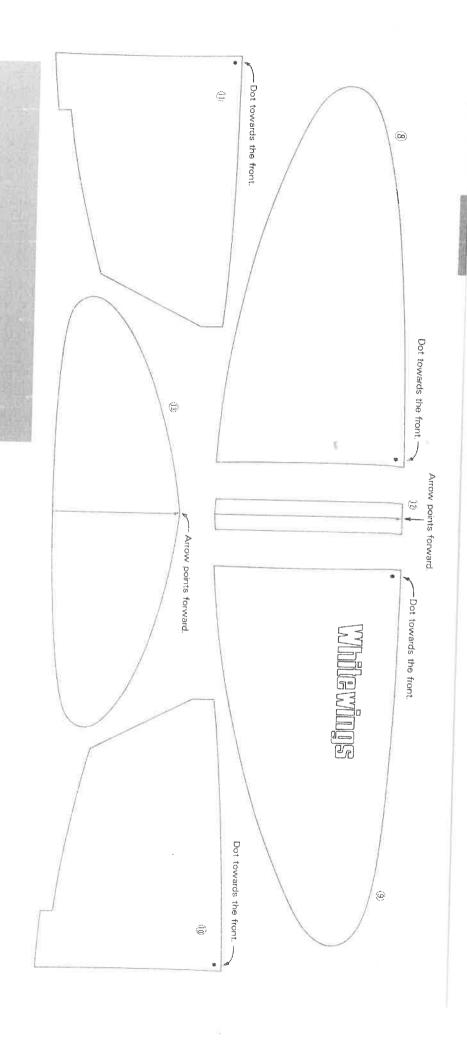












Racer 521 JACQUELINE

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